What is claimed is:

1. A projection-type display apparatus for projecting an image onto a screen, comprising:

a light source;

a signal processing unit for processing an input image signal to output a first image signal representing first primary-color information R1, G1, and B1 representing values of red, green, and blue components of an image to be projected;

a signal conversion unit for converting the first image signal into a second image signal representing a coefficient M which depends on luminance of the image to be projected defined by the first primary-color information R1, G1, and B1, and into a third image signal representing second primary-color information R2 = R1/M, G2 = G1/M, and B2 = B1/M;

a first light valve for modulating light received from the light source in accordance with the coefficient M, the light changing in color among red, green, and blue in sequence;

a second light valve for further modulating the light received from the first light valve in accordance with the second primary-color information R2, G2, and B2 in sequence; and

a projection unit for throwing the light received from the second light valve onto the screen.

2. A projection-type display apparatus according to claim 1, in which values of the first primary-color information R1, G1, and B1, the second primary-color information R2, G2, and B2 and the coefficient M are normalized to be between 0 and 1, the signal conversion unit produces temporal parameters $Y = 0.3 \times R1 + 0.59 \times G1 + 0.11 \times B1$, $Mt = Y^{1/2}$, $Rt = R1/Mt$, $Gt = G1/Mt$, $Bt = B1/Mt$, $Mtt = \max(Rt, Gt, Bt)$, and determines a value of the coefficient M to be 1 if $Mtt > 1$, or to be a value of Mtt if not $Mtt > 1$.

3. A projection-type display apparatus according to claim 1, in which the signal conversion unit determines the values of the

coefficient M and the second primary-color information R2, G2, and B2 in order that one of the first and second light valves that has less leakage light than the other has a larger contributing ratio than the other in modulating the light received from the light source.

4. A projection-type display apparatus according to claim 1, in which the number of pixels of the second light valve is larger than that of the first light valve.

5. A projection-type display apparatus according to claim 4, in which the first and second light valves are disposed in a conjugate relation, and a shape of the pixels of the first light valve is different from a shape of the pixels of the second light valve.

6. A projection-type display apparatus according to claim 1, in which at least one of the first and second light valves is a reflective light valve.

7. A projection-type display apparatus according to claim 1, in which the light source is provided with a color-switching unit that receives white light and outputs the light changing in color among red, green and blue in sequence.

8. A projection-type display apparatus according to claim 1, further comprising a sync-separation unit for separating a vertical sync signal from the input image signal, the first light valve performing light modulation in accordance with the coefficient M on a pixel-by-pixel basis in synchronization with the vertical sync signal.

9. A projection-type display apparatus for projecting an image onto a screen, comprising:

a light source;

a signal processing unit for processing an input image signal to output a first image signal representing first primary-color

information R1, G1, and B1 representing values of red, green, and blue components of an image to be projected;

a signal conversion unit for converting the first image signal into a second image signal representing a coefficient M which depends on luminance of the image to be projected defined by the first primary-color information R1, G1, and B1, and into a third image signal representing second primary-color information R2 = R1/M, G2 = G1/M, and B2 = B1/M;

a first light valve for modulating light received from the light source in accordance with the coefficient M;

a color-separation unit for separating the light modulated by the first light valve into red, green and blue lights;

three second light valves for further modulating the red, green and blue lights received from the color separation unit in accordance wit the second primary-color information R2, G2, and B2 respectively; and

a projection unit for throwing mixture of the red, green, and blue lights modulated by the three second light valves onto the screen.

10. A projection-type display apparatus according to claim 9, in which a light recycling unit is disposed between the light source and the first light valve for adding light reflected by the first light valve and moves back to light source to the light emitted from the light source and moves toward the first light valve.

11. A projection-type display apparatus for projecting an image onto a screen, comprising:

a light source;

a signal processing unit for processing an input image signal to produce a first image signal representing first luminance information Y1 representing luminance of an image to be projected;

a signal conversion unit for converting the first image signal into a second image signal representing a coefficient $M = Y1^{1/2+\alpha}$, α being a parameter variable between -1/2 and +1/2, and into a third image signal representing second luminance information $Y2 = Y1^{1/2-\alpha}$;

a first light valve for modulating light received from the light source in accordance with the coefficient M represented by the second image signal;

a second light valve for further modulating the light received from the first light valve in accordance with the second luminance information Y2 represented by the third image signal; and

a projection unit for throwing the light received from the second light valve onto the screen.

12. A method of driving a projection-type display apparatus having a light source, a first light valve modulating light received from the light source in accordance with a first drive signal, the light changing in color among red, green and blue, a second light valve further modulating the light received from the first light valve in accordance with a second drive signal, and a projection unit throwing the light received from the second light valve onto a screen, comprising the steps of:

producing, from an input image signal, first primary-color information R1, G1, and B1 representing values of red, green and blue components of an image to be projected;

producing a coefficient M which depends on luminance of the image to be projected defined by the first primary-color information R1, G1, and B1;

producing second primary-color information R2 = R1/M, G2 = G1/M, and B2 = B1/M;

supplying the first light valve with the coefficient M as the first drive signal; and

supplying the second light valve with the second-primary color information R2, G2, and B2 as the second drive signal.

13. A method of driving a projection-type display apparatus having a light source, a first light valve modulating light received from the light source in accordance with a first drive signal, a light-separation unit separating the light modulated by the first light valve into red, green and blue lights, three second light valves further

modulating the red, green and blue lights received from the color separation unit in accordance with second drive signals, and a projection unit throwing mixture of the red, green, and blue lights modulated by the three second light valves onto a screen;

comprising the steps of:

producing, from an input image signal, first primary-color information R1, G1, and B1 representing values of red, green, and blue components of an image to be projected;

producing a coefficient M which depends on luminance of the image to be projected defined by the first primary-color information R1, G1, and B1;

producing second primary-color information R2 = R1/M, G2 = G1/M, and B2 = B1/M;

supplying the first light valve with the coefficient M as the first drive signal; and

supplying the three second light valves with the second-primary color information R2, G2, and B2 as the second drive signals.

14. A method of driving a projection-type display apparatus having a light source, a first light valve modulating light received from the light source in accordance with a first drive signal, a second light valve further modulating the light received from the first light valve in accordance with a second drive signal, and a projection unit for throwing the light received from the second light valve onto a screen, comprising the steps of:

producing first luminance information Y1 representing luminance of an image to be projected from an input image signal;

producing a coefficient $M = Y1^{1/2+\alpha}$, α being a parameter variable between -1/2 and+1/2;

producing second luminance information $Y2 = Y1^{1/2-\alpha}$;

supplying the first light valve with the coefficient M as the first drive signal; and

supplying the second light valve with the second luminance information Y2 as the second drive signal.